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## Research Aid

*USSR: Some Implications of Demographic  
Trends for Economic Policies*

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## USSR: SOME IMPLICATIONS OF DEMOGRAPHIC TRENDS FOR ECONOMIC POLICIES

### SUMMARY

1. The Soviet economy, hobbled since the early 1960s by sluggish technological advance, faces a slowdown in employment growth through the 1980s that could further arrest the pace of its economic development. The employment slowdown seems inevitable: growth of the adult population will drop because of declining birth rates since 1960, and the employed share of that population already is unusually high by international standards. Moscow probably hopes that the tight labor market will prove to be the catalyst for accelerated productivity growth if incentive systems are altered so as to encourage more labor-saving innovations.

2. Augmenting employment growth with housewives, students, military personnel, and retirees is possible, but of limited potential or unlikely for policy reasons. The share of females in the primary working age group 20 to 54 years employed is already about nine-tenths and probably cannot be maintained in the face of rising family income levels. Reducing the school-leaving age or demobilizing some of the armed forces would yield only one-time windfalls and would not reverse the downtrend in employment growth. The retirement system probably will be altered either by raising the minimum age from its current 55 years for women and 60 years for men or by increasing incentives for pensioners to work. This would probably be offset, however, by the likely withdrawal of some housewives from the labor market.

3. The need for increased internal migration adds a separate dimension to the challenge faced by Soviet planners. Because of higher birth rates, Central Asia, Kazakhstan, and the Transcaucasian regions do not face as serious a labor problem as the rest of the country. Planners will therefore try to accelerate migration from those republics. In addition, population movements from farms to cities will speed up nationwide – shifting labor shortages from urban to rural areas – unless the government deliberately limits such migration and restricts the rate of urban hiring.

4. In facing the challenge, Soviet authorities are looking first to the industrial sector to restrict hiring sharply during the the current plan. They also are experimenting in that sector with an incentive system that encourages managers to release redundant labor – the Shchekino Experiment – a system that may well be extended to other parts of the economy to cope with the tight labor market.

5. A slowdown in economic growth seems certain by the 1980s, however. Productivity is unlikely to increase sufficiently to offset the retardation in employment growth. A GNP growth rate of 5.0% per year would require an increase in output per manhour of 3.5% annually in 1976-80, compared with less than 2.0% in 1971-75. The required productivity increase would reach 4.5% per year in 1986-90 when increments in the labor force slow to a trickle. This acceleration in the growth of labor productivity would have to overcome the resistance posed by declining rates of growth in the amount of capital per worker. Soviet planners have therefore nicknamed the Tenth Five-Year Plan (1976-80) as "the plan of efficiency and quality," and have exhorted workers and management to improve both labor and capital utilization. The unusually wasteful use of labor in the USSR, documented extensively in Western commentary, and Soviet history suggest that some success can be achieved under pressure. But higher productivity growth probably cannot be sustained without drastic changes in existing incentive systems.

## DISCUSSION

### Introduction

6. A specter is haunting Soviet economic planners – the specter of labor shortages throughout the 1980s. A slowdown in growth of the working-age population is already under way, and by 1986 the growth rate will have slowed steadily to 0.2% annually for that year compared with 1.9% in 1976. Unless the employed share of the population increases, employment growth will slow accordingly.

7. The prospect is especially painful for the planners because of their past heavy dependence on labor for economic growth. Labor's contribution to Soviet economic growth has generally been larger than in other developed economies, while the contribution of productivity growth has been smaller. To sustain economic performance through the 1980s, therefore, will require more emphasis on productivity and less on labor supply.

8. The uncharacteristically low production plans for 1976-80 indicate that the planners already are bracing for the slowdown in employment growth. In a departure from normal practice, overall employment goals for the new plan period have not been made public, suggesting government concern over popular reaction to the "bad news." For industry alone, however, output and productivity goals imply that employment growth will be less than half the rate of 1971-75.

9. According to Murray Feshbach and Stephen Rapawy, in an article appearing in a compendium on the Soviet economy published by the Joint Economic Committee of the US Congress, major Soviet policy decisions will be required to cope with the resulting manpower problems. They also predict that labor shortages will be exacerbated by competing civilian and military demands for skilled young people. Finally, they conclude that more rapid population growth in Central Asia, Kazakhstan, and the Transcaucasian regions than elsewhere in the USSR make likely "a crisis management approach involving various legislative and administrative expedients to cope with the labor, investment, political, and military implications of these changes."<sup>1</sup>

10. This report will (1) describe the nature and magnitude of the demographic problem, (2) analyze its implications for employment in the perspective of past trends in population and employment, and (3) evaluate its potential impact on economic growth.

### The Demographic Problem

11. Annual increments to the Soviet population of working age, which averaged 2.5 million during 1971-75, will decline to 1.6 million in 1980 and will average less than 0.5 million in the mid-1980s. Two developments will contribute about equally to the slowdown: fewer persons reaching working age and more reaching retirement age (see Table 1). The decline in the number of new entrants reflects the falling birth rates of the 1960s, and the increase in the number of retirees is the result of the rising birth rates of the postrevolutionary, precollectivization period of the 1920s.

12. A more severe but shorter retardation occurred in the late 1950s and early 1960s (see Table 1). The cause was the unusually sharp drop in births and much higher infant mortality during World War II – the number of 16-year-olds in 1960 (born in 1944) was 60% less than the number in 1955. Between the peak of 1976 and the trough of 1985, in contrast, the number of new 16-year-olds will drop by only 23%.

### The Geographic Problem

13. Growth of the working-age population not only will be smaller but will be concentrated during the 1980s in Central Asia,<sup>2</sup> Kazakhstan, and the

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1. "Population and Manpower Trends and Policies," in Joint Economic Committee, US Congress, *Soviet Economy in a New Perspective*, 14 October 1976.

2. Kirghiziya, Tadzhikistan, Turkmenia, and Uzbekistan.

Table 1

USSR: Population of Working Age<sup>1</sup>

	Million Persons (Midyear)				
	Total	Annual Increments	Entrants (16-year-olds)	Deaths	Departures (55/60-year-olds)
1955	114.7	2.7	4.7	0.4	1.6
1956	116.9	2.2	4.3	0.4	1.7
1957	118.6	1.7	3.9	0.5	1.7
1958	119.6	1.0	3.1	0.4	1.7
1959	119.6	Negl	2.1	0.4	1.7
1960	119.5	-0.1	1.9	0.2	1.8
1961	119.6	0.1	2.3	0.4	1.8
1962	120.2	0.6	2.8	0.4	1.8
1963	121.2	1.0	3.3	0.4	1.9
1964	122.6	1.4	3.8	0.4	2.0
1965	124.1	1.5	4.1	0.5	2.1
1966	125.7	1.6	4.2	0.4	2.2
1967	127.2	1.5	4.3	0.5	2.3
1968	128.6	1.4	4.4	0.6	2.4
1969	130.0	1.4	4.3	0.5	2.4
1970	131.7	1.7	4.5	0.6	2.2
1971	134.0	2.3	4.8	0.5	2.0
1972	136.5	2.5	4.9	0.5	1.9
1973	139.0	2.5	4.9	0.5	1.9
1974	141.7	2.7	5.0	0.4	1.9
1975	144.4	2.7	5.1	0.5	1.9
1976	147.2	2.8	5.2	0.5	1.9
1977	149.9	2.7	5.2	0.5	2.0
1978	152.2	2.3	5.0	0.6	2.1
1979	154.2	2.0	4.8	0.6	2.2
1980	155.8	1.6	4.5	0.5	2.4
1981	156.9	1.1	4.3	0.7	2.5
1982	157.7	0.8	4.2	0.7	2.7
1983	158.3	0.6	4.1	0.6	2.9
1984	158.8	0.5	4.0	0.6	2.9
1985	159.2	0.4	4.0	0.7	2.9
1986	159.5	0.3	4.0	0.7	3.0
1987	159.9	0.4	4.1	0.6	3.1
1988	160.6	0.7	4.2	0.6	2.9
1989	161.2	0.6	4.3	0.7	2.9
1990	161.9	0.7	4.4	0.7	3.0

1. Males age 16-59, females age 16-54. Source: U.S. Department of Commerce, Bureau of Economic Analysis, September 1976. Because of rounding, components may not add to totals shown.

Transcaucasian region<sup>3</sup> (see the chart). Birth rates in these republics remained relatively high during the 1960s, apparently less affected by the social and economic forces reducing fertility elsewhere in the country and the impact on births of World War II. Indeed, population growth rates in Central Asia, Kazakhstan, and the Transcaucasian regions traditionally have been higher than in the rest of the nation. During 1960-70, for example, those areas accounted for almost one-third of the increase of 12 million in the nation's able-bodied population, although they included less than one-fifth of that population.

14. In the RSFSR, the working-age population will actually decline during the 1980s, while remaining essentially unchanged in the Ukraine and the Baltic region. These areas currently account for about four-fifths of nonfarm employment and an even larger share of industrial employment.

15. If the historical pattern of internal migration continues into the 1980s, problems associated with differential population growth will be compounded by net inflows of persons from other regions of the USSR into Central Asia, Kazakhstan, and the Transcaucasian regions. Workers migrated into these less-developed areas primarily because the indigenous population failed to supply the labor required by the growing urban-industrial economy. The southern climate apparently has been a major attraction for unskilled labor from other areas, particularly from the far east and north.

#### Government Influence over Employment

16. Although the Soviet government does not directly control the supply and allocation of labor – as it controls the allocation of investment goods, for example – it has a decisive influence nonetheless on employment growth and distribution. The levers include a variety of plans, policies, regulations, and special institutions.

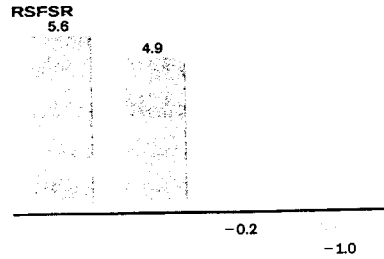
17. *Economic plans* – Annual and quinquennial plans include specific employment targets in tandem with output and other performance goals. Total employment targets are based largely on demographic expectations, with subtargets for various industries that are consistent with plans for each industry's production and labor productivity. Thus, employment targets specify the economy's demand for labor in the plan period. Limits on labor costs that are imposed by the planners are supposed to force enterprise managers to adhere to the employment targets.

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3. Armenia, Azerbaydzhan, and Georgia.

# **USSR: Sum of Yearly Increments to the Population of Working Age** **(Males 16-59, Females 16-54)**

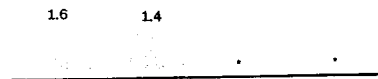
Million Persons Mid-year



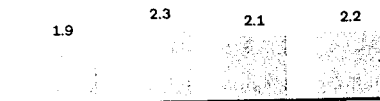
**Baltic region**



**Ukraine**



**Central Asian region**



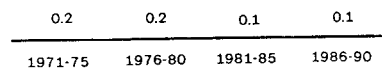
**Belorussia**



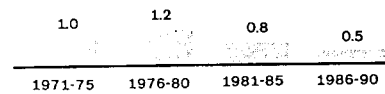
**Kazakhstan**



**Moldavia**



**Transcaucasian region**



\*Less than 50,000.

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18. *A policy of full employment* – Official Soviet employment policy envisions not only the provision of jobs for all persons who want to work, but also the requirement that all able-bodied persons work whether they want to or not. This policy of full employment accounts for the unusually high proportion of the population in the labor force, as well as the large amount of redundant labor in Soviet enterprises.

19. *Controls over wages, hours, and working conditions* – The government's control over hours of work permits it to influence the growth of the labor supply by changing scheduled hours, either selectively or throughout the economy. By controlling wage rates and working conditions, the government can influence the distribution of the work force – with differential wage rates and other amenities for priority and nonpriority industries, for example. Labor laws also impose restrictions on layoffs and dismissals, compounding problems of redundant labor.

20. *Control over the educational and retirement systems* – Admissions policies for secondary and higher schools influence the average school-leaving age and thus the share of school-age youths available for the labor force. Similarly, statutory retirement ages – 55 for women and 60 for men – as well as ceilings on supplementary earnings for pensioners are the principal determinants of the share of older persons in the labor force.

21. *Internal passports and mandatory registration with local police* – Although no statutory restraints are imposed on internal migration, new arrivals must register with the local authorities and normally produce evidence that employment has already been arranged. The system has been relatively effective in controlling rural-to-urban migration and avoiding buildups of unemployed migrant workers in urban areas.

22. *A nationwide network of labor exchanges* – Developed only since the late 1960s, labor exchanges involve the government directly in matching jobseekers with jobs. Labor exchanges had been closed by Stalin in 1930 when unemployment was "abolished." The current pragmatic approach by the government recognizes the need for such intervention in the labor market, although Moscow still insists there is no unemployment in the USSR.

#### Maintaining Employment Growth: Policy Options

23. In the face of declining increments to its labor supply, the Soviet government will try to keep employment growing as rapidly as possible by attracting

more persons not currently employed into the workforce and by discouraging early retirement. At the same time, it is likely to launch a major effort to reduce labor demand and promote labor-saving innovations throughout the economy. Such a scenario would represent a dramatic departure from past growth strategy, which depended predominantly on rapid increases in capital stock and employment. Nevertheless, the potential for labor-saving innovation in the Soviet economy is large, while the potential for maintaining employment growth at past rates is small.

24. The potential for maintaining employment growth is limited primarily by the unusually high proportion of the population already in the work force (see Table 2). According to the 1970 census, 93% of males and 89% of females of prime working age (ages 20-59, males and 20-54, females) were in the work

Table 2  
Economically Active Population, Twenty Years of Age and Older,  
as Percent of Total Population, Selected Countries<sup>1</sup>

	Percent			
	Males, Ages 20-59	Females, Ages 20-54	Males, Ages 60 and Over	Females, Ages 55 and Over
United States (1970)	90.9	50.4	40.4	24.7
Japan (1970)	95.2	58.3	65.5	34.7
Austria (1971)	93.8	54.8	19.8	12.1
Belgium (1970)	91.6	40.2	25.0	7.1
France (1968)	92.3	47.7	34.5	20.3
West Germany (1970)	94.4	49.8	34.0	15.4
United Kingdom (1970)	96.3	54.8	42.7	20.7
Yugoslavia (1971)	90.5	49.1	55.3	20.5
Bulgaria (1965)	92.7	81.6	35.1	18.4
Czechoslovakia (1970)	94.9	78.3	21.6	15.7
East Germany (1971)	96.0	78.3	44.2	24.3
Hungary (1970)	94.6	66.4	26.2	14.5
Poland (1970)	93.7	77.2	66.7	46.2
Romania (1966)	95.7	76.7	50.4	37.0
USSR (1970)	93.2	88.9	20.0	12.6

1. Source: International Labour Office, *Yearbook of Labour Statistics*, 1975.

force, and these shares may be even higher now. Persons of prime working age outside the work force are mainly full-time students, disabled, or residents of institutions. Practically the only potential sources of additional labor, therefore, are among the young (16-19) and the retired.

### *Women Workers*

25. In its extensive use of women workers, the USSR has gone well beyond other developed nations and even other Communist nations (see Table 2). Until the 1960s, the participation rate of women 20 to 54 years in the USSR – 77% in 1959 – was about in line with other Communist nations. The large increase – almost 12 percentage points – between 1959 and 1970 was the principal reaction to the unusually high demand for labor during those years. As shown in Table 3,

Table 3

#### USSR: Annual Increments to the Population of Working Age and to Population Employed<sup>1</sup>

Million Persons (Midyear)				
	Working Age Population	Employed		
		Total	Agriculture	Nonagriculture
1956	2.2	2.7	1.0	1.7
1957	1.7	1.1	-0.8	1.9
1958	1.0	2.2	0.1	2.1
1959	Negl	0.3	-2.0	2.3
1960	-0.1	1.4	-1.5	2.9
1961	0.1	2.6	-0.5	3.1
1962	0.6	1.8	-0.3	2.1
1963	1.0	1.2	-0.9	2.1
1964	1.4	2.6	Negl	2.5
1965	1.5	4.5	1.4	3.1
1966	1.6	2.7	0.1	2.6
1967	1.5	2.0	-0.6	2.6
1968	1.4	2.2	-0.5	2.7
1969	1.4	1.7	-0.9	2.6
1970	1.7	2.0	-0.2	2.2
1971	2.3	2.0	-0.3	2.3
1972	2.5	1.9	-0.4	2.3
1973	2.5	2.1	0.1	2.0
1974	2.7	2.1	Negl.	2.1
1975	2.7	NA	NA	2.1

1. Because of rounding, components may not add to totals shown.

increments to employment actually exceeded increments to the population of working age in every year from 1958 to 1970.

### *Older Workers*

26. The relatively low participation rates for both men and women in the retirement ages shown in Table 2 are probably illusory for the most part. In the 1970 population census, each household member was asked to specify his or her "means of subsistence" from among the following:

- (1) Employed in a state enterprise
- (2) Employed in a collective farm
- (3) Self-employed
- (4) Employed by a private individual
- (5) Private subsidiary agricultural economy (private plots)
- (6) Pension
- (7) Student stipend
- (8) Dependent on other family members

Census enumerators were instructed to include under "pension" those persons receiving pensions who were not employed in a regular, full-time job. Because of the statutory limitations on combined monthly incomes from pensions and wages, most working pensioners have part-time jobs. Consequently, they would not have been counted as employed.

27. The sharp decline registered in participation rates among retired persons between 1959 and 1970 – from 53% to 20% for men and 38% to 13% for women – is therefore exaggerated. A pronounced decline certainly occurred, however; the number of pensioners increased from 4 million in 1959 to almost 24 million in 1970 – from 15% of the retirement-age population to 66%. Participation rates for this population, although not as low as reported, may have dropped below the rates prevailing in other Communist countries. If so, this population contains a labor reserve that could be tapped if necessary by modifying pension laws and/or providing incentives for delayed retirement.

28. Soviet pension laws are relatively liberal even by Communist standards, as they now cover collective farmers in the same program with state-employed workers – a step no East European country has yet taken. Retirement ages are higher in Poland and East Germany (65 for men, 60 for women) and participation

rates of older persons tend to be relatively high in the predominantly agricultural countries (Bulgaria, Poland, Romania, and Yugoslavia). The unusually high rates in Poland also reflect the absence of pension coverage for private farmers, who still dominate Poland's agriculture.

29. Various incentives already encourage retired persons to continue working, and demand for their services probably will increase as the "natural" increments to the work force dwindle. Because of limitations imposed on total earnings, working pensioners probably tend to be those with relatively small pensions and therefore with little education and skill.<sup>4</sup> Most collective-farm pensioners, for example, tend to continue working at least on a seasonal basis. But a dramatic change in pension laws – postponing retirement or removing the income limitation – is essential if the retirement-age population is to be used to augment labor force growth substantially. Any change would have to be aimed specifically at urban workers, who generally have little incentive to continue working under current regulations.

### *Younger Workers*

30. A slowdown in the growth of enrollment in secondary and higher schools would increase the supply of labor among teenagers. The Soviets tinkered with such a scheme in 1959-63 by encouraging school-plus-work arrangements for Soviet youths, but educational quality deteriorated and the program was abandoned in 1964. Since then, educational policy has emphasized universal secondary education, and labor force participation rates among teenagers declined from 70% in 1959 to about 50% in 1970. This rate apparently has remained steady since then, as full-time enrollment growth at secondary and higher schools has roughly kept pace with population growth in the relevant age cohorts. Plans for 1976-80 call for further progress toward universal secondary education.

### *The Armed Forces*

31. A partial demobilization would augment civilian employment on a one-time basis by shifting some military personnel into civilian occupations and by reducing the draft contingent required to maintain a given level of the armed

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4. The ceiling on total earnings is 300 rubles per month. Average monthly earnings of professional and technical workers in industry are now more than 200 rubles monthly with experienced older workers earning much more. Pensions range from 50% to 75% of preretirement earnings. These highly skilled personnel in the retirement ages, therefore, probably would gross 400 to 500 rubles or more monthly without the earnings ceiling.

forces. Demobilization, however, would require changes in both Soviet perceptions of defense requirements and in the current policy of universal military service. Furthermore, any reduction would have to be substantial to have a significant impact on a civilian work force that currently numbers almost 130 million persons on an average annual basis.

32. Timing would be crucial in any event. When the USSR reduced its armed forces from almost 6 million in 1955 to 4 million in 1960, the windfall gain for civilian enterprises was negated in part by rising unemployment among teenagers. The planners apparently had not considered the impact of the reductions on the labor supply, and the managers tended to choose seasoned veterans over inexperienced youths. The unemployed were absorbed only when population growth slowed while labor demand remained high.

33. The armed forces could be reduced gradually by reducing the number of draftees while holding the discharge rate unchanged. This would require a reversal of the policy of universal military training explicit in the 1967 military draft law. At that time, when the number of persons reaching draft age (18) was increasing rapidly, the USSR reduced mandatory service from 3 to 2 years on the average. As a consequence, the number of youths drafted annually increased by about 50%. In the next 10 to 15 years, the opposite will happen. The numbers reaching age 18 will decline from 2.6 million in 1978 to 2.0 million in 1986. Maintaining the size of the armed forces in the mid-1980s, therefore, will require some reduction in draft standards, such as tightening deferment policies or recalling older men. To avoid such measures (and maintain the principle of universal military service), the USSR could revert to the pre-1967 terms of service. Alternatively, the decline in available draftees would provide an appropriate opportunity to cut back on the draft and thereby reduce the armed forces.

#### *Longer Workweek*

34. Confronted by a dearth of new entrants to its work force – especially in the 1980s – the USSR could choose to increase its labor supply by extending the workweek from its current 41 hours. This would be a desperate measure. Stalin's extension of the workweek from 41 to 48 hours in 1940 stands as the only historical precedent in modern times. At that time, most workers had been on a 7-hour day and 41-hour week, with a "six-day" week that meant five days on and one day off, the latter changing from week to week. The 48-hour week, in force from 1940 to 1956, generally involved six 8-hour days weekly.

35. The reduction of weekly hours from 48 to 41 was accomplished with great fanfare during 1956-60. When completed, work schedules generally involved five 7-hour weekdays and a 6-hour Saturday. Then in 1967, the 41-hour workweek was compressed into five weekdays, each containing 8 hours and 12 minutes, a system that remains in effect to this day.

36. Short of formally extending the workweek, scheduled overtime could be introduced selectively, say in priority sectors, especially by taking advantage of the availability of Saturday as a day off. But this would be an expensive procedure; labor laws dating back to the early 1930s require time-and-a-half for the first two hours of overtime, double time thereafter and for work on holidays and days off. Furthermore, Soviet workers have grown accustomed to the current pattern of work and leisure and would be unlikely to acquiesce placidly to any drastic change.<sup>5</sup>

#### Likely Employment Trends

37. Considering the population and other constraints on employment growth in the USSR during 1976-90, a slowdown seems inevitable. Labor force projections prepared by Stephen Rapawy and based on constant 1970 participation rates show a steady growth retardation from about 1.5% annually during the mid-1970s to about one-half percent per year toward the late 1980s (see Table 4).

Table 4  
USSR: Average Annual Rates of Growth of Population  
and Labor Force

	Percent				
	1966-70	1971-75	1976-80	1981-85	1986-90
Population (Ages)					
16-59/54	1.2	1.9	1.5	0.4	0.3
60/55 and over	3.3	1.3	1.2	2.3	2.1
16 and over	1.6	1.7	1.5	0.8	0.7
Labor Force <sup>1</sup>					
Total	1.5	1.6	1.5	0.9	0.5
Agriculture	-1.3	-1.4	-1.6	-1.7	-1.8
Nonagriculture	3.0	2.8	2.5	1.6	1.1

1. Source: Stephen Rapawy, *Estimates and Projections of the Labor Force and Civilian Employment in the USSR 1950-1990*, US Department of Commerce, Bureau of Economic Analysis, September 1976.

5. In 1967, for example, labor unrest erupted in Tula Oblast, 161 kilometers south of Moscow, apparently in protest over poor work scheduling and other working conditions.

### *Participation Rates*

38. An assumption of constant participation rates seems reasonable. More employment among persons in the retirement ages is likely to be offset by less employment among women 20 to 54 years of age, while the employment rate among teenagers remains unchanged. The government can be expected to legislate incentives for older workers to remain employed or return to their jobs. Rising incomes, however, are likely to induce more Soviet women to opt for a housewife's role rather than paid employment. Furthermore, no appreciable change is envisioned in the size of the armed forces. Some modification of the conscription system is likely by 1978 or soon thereafter to accommodate shrinking cohorts of 18-year-olds, but this would yield a relatively small one-time windfall for the civilian job market. Nor is any deliberate reduction in the school-leaving age expected; the government is not likely to reduce the educational attainment of new labor market entrants or expand work study programs after the unfavorable experience of the early 1960s.

### *Agricultural Employment*

39. The accelerated decline in agricultural employment projected by Rapawy, consistent with past trends, could jeopardize farm output goals. Despite deliberate government efforts to slow migration by reducing rural-urban income differentials, farm incomes still are relatively low. As a result, farm workers have responded to the excess labor demand in urban areas, and farm employment has continued to decline.

40. The movement of labor from farms to cities has often played a crucial role in sustaining relatively high manpower growth in nonagricultural sectors. Agricultural employment dropped from 43.5 million in 1958 to 38.2 million in 1964, for example, as employment opportunities swelled in urban areas because of the slow growth of the working-age population. Farm employment has continued to decline, although much more slowly, into the mid-1970s.

41. Migration from farms involved the young primarily and left behind a population predominantly outside of the working ages. Between 1959 and 1970, the rural population in ages 20-34 declined by 33%, while the urban population in those ages increased 11% (see Table 5). Almost half the rural population in 1970 was under 15 or over 59, compared with about one-third in urban areas. Available demographic data suggest that migration may have accelerated since 1970.



The total rural population, which declined from 109 million in 1959 to 106 million in 1970, fell further to 99 million by January 1976.

Table 5  
USSR: Urban and Rural Population by Age<sup>1</sup>

Age	Million Persons			
	Urban		Rural	
	1959	1970	1959	1970
Total	100.0	136.0	108.8	105.7
0-14	26.6	33.9	35.0	36.4
15-59	65.6	88.0	61.9	54.9
15-19	8.1	13.7	8.4	8.3
20-34	30.7	34.1	26.9	17.9
35-59	26.8	40.2	26.6	28.7
60 and over	7.8	14.1	11.9	14.4

1. Data as of 15 January for the given year.

### *Nonagricultural Employment*

42. The accelerated migration to cities, should it occur, will help temper the impact of the labor force slowdown on the nonfarm sectors of the economy. Nevertheless, nonfarm employment growth by 1986-90 will average less than half the rate in 1976-80. Soviet planners already have announced a sharp deceleration in industrial employment for the Tenth Five-Year Plan (1976-80) but have not publicized their employment plans for the nonindustrial sectors. The plan for industrial employment calls for average growth of 0.8% annually, compared with 1.5% per year during 1971-75.

### *Migration of Labor*

43. With the population of working age increasing more rapidly in the less developed areas of Central Asia, Kazakhstan, and the Transcaucasus than in other areas, Soviet planners are confronted by the need for accelerated internal migration. Market forces alone should stimulate some additional movement as potential workers shift to where the jobs are more plentiful and lucrative. In addition, the government still maintains an organization to handle organized recruitment and

resettlement and to administer a network of labor exchanges throughout the country. The resettlement effort, however, would have to be formidable to be effective. A shift of about 9 million persons in the working ages – presumably accompanied by their families – out of Central Asia, the Transcaucasus, and Kazakhstan would be necessary during 1976-90 to make the growth of its working-age population equal to the growth in the rest of the country.

44. Migration from these less-developed regions will have to be encouraged and properly accommodated. But, the orientation of minority nationalities toward irrigation agriculture, warm climates, early marriage, and large families makes it unlikely that they could quickly adapt to the living conditions and vocational demands of the European or Siberian regions of the country. The additional language and educational constraints make it all the more unlikely that massive westward and northward migration can be successfully achieved – either forcibly or voluntarily.

#### **Implications for Economic Growth**

45. The impact of the employment slowdown on growth of GNP will be severe unless labor productivity growth accelerates substantially. To maintain a GNP growth rate of 5.0% annually during 1976-80, for example, GNP per manhour would have to increase at an average annual rate of 3.5% compared with 1.8% during 1971-75 (see Table 6). As employment growth slows even further in the 1980s, the required increase in output per manhour rises to an average of 4.5% during 1986-90 for the same GNP growth rate.

#### ***Factors Retarding the Growth of Labor Productivity***

46. On balance, it seems doubtful that rates of growth of labor productivity ranging from 3.5% to 4.5% per year for the whole economy can be sustained over a period of 10 to 15 years. First of all, the capital-labor ratio probably will increase at a slower pace in the future, which should retard productivity growth. Soviet plans call for a slowdown in investment growth from an average of 6.5% annually during 1971-75 to 3.5% during 1976-80, as planners hope to improve capital utilization.<sup>6</sup> Beyond 1980, investment intentions are uncertain, and decisions probably have not yet been made by the planners themselves. Tradeoffs with consumption, and the relative availability of labor for investment sectors, will loom

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6. As shown in Table 6, the slowing of growth in the total stock of plant and equipment – from nearly 8.0% to 6.5% – although less dramatic than the decline in growth of investment flows, will be substantial.

Table 6

## USSR: Selected Aspects of Economic Growth

	Average Annual Rates of Growth in Percent			
	1951-60	1961-70	1971-75	Plan 1976-80 <sup>1</sup>
Gross national product	5.9	5.3	3.8	5.0
Manhours worked	1.3	1.8	2.0	1.5 <sup>2</sup>
GNP per manhour	4.5	3.4	1.8	3.5
Fixed capital	9.4	8.1	7.9	6.5
Fixed capital per manhour	8.0	6.2	5.8	5.0
Human capital in labor force <sup>3</sup>	2.9	4.2	3.7	NA
Human capital per manhour	1.6	2.4	1.7	NA

1. Based on official plans and rounded to nearest one-half %.

2. Manhours assumed to increase at same rate as labor force.

3. Education weighted by estimated relative costs in 1955.

large in those decisions. Shifts of investment funds from plant and equipment to housing, for example, would depress economic growth because of differing output-capital ratios.

47. The direct effect on labor productivity of the increased emphasis on the trade and services sector would also be unfavorable.<sup>7</sup> More important, the USSR will not again attain the rapid growth in human capital that it enjoyed in the 1960s. The rate of increase of enrollment in high schools, universities, and graduate programs will dwindle if only because there is less room for growth. In addition, the authorities will be tempted at the margin to push young people into the labor market rather than permit them to go on to universities.

*Possible Sources of Accelerated Growth of Labor Productivity*

48. On the other side of the balance, technology imports from the West will tend to promote productivity growth. In current prices, their growth has been impressive. Even in constant prices the rate of increase of machinery imports has undoubtedly accelerated. Balance-of-payments constraints, however, will limit the

7. In part, this is a statistical aberration reflecting a national income accounting convention. Many services are valued in terms of their labor inputs; capital services are ignored.

direct contribution of imports to the general level of productivity. The impact of technology transfer over the medium-to-long term is still very much a controversial question.<sup>8</sup> In large part, the results of imported technology depend on the kind of demonstration effect it has on research and production beyond the immediate point of application.

49. The bureaucratic response to the expected slowdown in employment growth was not long in coming. The Tenth Five-Year Plan (1976-80) has been given the title, "the plan of efficiency and quality." Targets for accelerating the improvement of labor utilization, such as reducing manual work through mechanization and increasing the capital-labor ratio, are included in the plan. In addition, the plan calls for altering the wage system so that payments are related more closely to results.

50. Lacking direct controls over hiring and firing, the government will have to use its planning and incentive systems to influence labor allocation and utilization. In the USSR, workers are expected to find jobs on their own, with help from the labor exchanges, while enterprise managers are expected to recruit workers in accordance with plan goals. These plan goals, in turn, can be expected to reflect the growing scarcity of labor, and workers and management alike will be under considerable pressure to improve labor utilization.

51. The industrial sector of the economy has already demonstrated that slower employment growth need not necessarily result in a commensurately slower growth in output (see Table 7). An upsurge in labor productivity in 1971-75 may have been a delayed consequence of the 1965 economic reform, which gave managers greater control over the size and structure of their work force.<sup>9</sup> In addition, the "Shchekino Experiment," begun in 1967 as an effort to eliminate redundant labor, is now standard procedure in about 800 industrial enterprises -- compared with only 300 in 1972. Under the "Experiment," wages saved by reducing employment are distributed among the remaining employed workers. Usually, redundant workers are transferred elsewhere in the enterprise, or else employment is reduced by attrition, to avoid actual dismissals.

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8. Research currently under way in this office will attempt to reconcile major differences in the results of research findings in Western academic circles concerning the comparative productivity of domestically produced plant and equipment as opposed to that imported from the developed West.

9. The workweek reduction in 1956-60 also showed that unrealized efficiency could be tapped, at least for a brief period. Productivity growth picked up at that time in response to a marked slowdown in the rate of increase of manhours. Then, as the labor picture improved, labor-hoarding became prevalent again.

Table 7

## USSR: Production, Employment, and Output per Worker in Major Industries

	Average Annual Percentage Increase								
	Production <sup>1</sup>			Employment			Output per Worker		
	1961-65	1966-70	1971-75	1961-65	1966-70	1971-75	1961-65	1966-70	1971-75
Industry, Total	6.7	6.7	5.7	3.9	2.9	1.5	2.7	3.7	4.1
Coal	2.8	2.0	2.3	0.1	-1.4	-2.7	2.7	3.5	5.1
Chemicals	11.6	8.7	8.9	9.6	4.6	2.3	1.8	3.9	6.5
Ferrous metals	7.5	5.5	4.2	3.4	1.9	0.1	4.0	3.5	4.1
Machinery	7.8	8.3	7.4	6.6	3.9	2.8	1.1	4.2	4.5
Construction materials	5.2	5.4	5.1	1.7	3.1	1.5	3.4	2.2	3.6
Forest products	3.0	3.5	3.7	0.9	0.2	-0.4	2.1	3.3	4.1
Light industry	2.4	8.0	2.6	2.2	3.1	0.3	0.2	4.8	2.3
Food	7.0	4.7	3.7	3.7	2.3	0.8	3.2	2.4	2.9

1. Rush V. Greenslade, "The Real Gross National Product of the USSR, 1950-1975," in *Soviet Economy in a New Perspective*, US Joint Economic Committee, 14 October 1976, p. 271.

52. The incentive to eliminate redundant labor will grow stronger, especially in the 1980s, as increments to the labor force dwindle rapidly. The major contributing factors to "over-full employment" in the Soviet economy have been (1) on the supply side, a government policy insuring jobs for all who want them, and (2) on the demand side, a tendency on the part of managers to hoard workers and an aversion on the part of policy makers to the social and political consequences of technological unemployment. In a tight labor market, hoarding of labor will become increasingly difficult and technological unemployment less of a concern.

53. Labor-saving innovation offers another means of keeping growth rates up. To assure an incentive structure that encourages labor-saving innovation, the "Shchekino Experiment" or some variation of it might be extended insofar as possible throughout the economy, encountering diminishing resistance as the labor market tightens. The government and enterprise traditions that have perpetuated over-full employment underlie most of the resistance to the "Experiment" encountered thus far. Given those traditions, an incentive system designed specifically to save labor could be most effective during periods of relative labor shortage.

54. Even if planning and tinkering with management incentive systems can bring redundant labor down to reasonable levels, the motivation of the labor force would remain as the principal uncertainty with respect to forecasts of labor productivity. Official complaints about the pace and quality of work are abundant. Some Soviets have argued that more consumer goods and better housing are as important or more important to higher labor productivity than additional capital

stock. Real per capita consumption has been rising steadily in the USSR; the problem seems to be how to tie the rate of increase more directly to performance in the factory or on the farm.

55. In any event, the quest for productivity growth, especially through labor-saving innovation, will play a critical role in Soviet economic policy for the foreseeable future. The unusually wasteful use of labor in the USSR has been documented extensively in Western commentary. In the past, the labor supply apparently expanded whenever necessary to permit enterprise managers to meet plan goals with existing technology and work organization. Planners apparently are hoping that a tighter labor supply will force managers to surface what the Soviets euphemistically call "hidden reserves" and use their labor more efficiently. These hopes may be realized in part, but not to the extent necessary to avoid a slowdown in economic growth.